Installation and Maintenance Manual
SYJ3000/5000/7000 Series 4/5 Port Solenoid Valves

For future reference, please keep this manual in a safe place

This manual should be read in conjunction with the current product catalogue

Safety Instructions

These safety instructions are intended to prevent a hazardous situation and/or equipment damage.These instructions indicate the level of potential hazard by label of "Caution", "Warning" or "Danger". To ensure safety, be sure to observe ISO4414 (Note1), JIS B 8370 (Note2) and other safety practices.
Note 1: ISO 4414: Pneumatic fluid power – Recommendations for the application of equipment to transmission and control systems.
Note 2: JIS B 8370: Pneumatic system axiom.

⚠ **CAUTION :** *Operator error could result in injury or equipment damage.*

⚠ **WARNING:** *Operator error could result in serious injury or loss of life.*

⚠ **DANGER :** *In extreme conditions, there is a possible result of serious injury or loss of life.*

⚠ WARNING

1. **The compatibility of pneumatic equipment is the responsibility of the person who designs the pneumatic system or decides its specifications.**
   Since the products specified here are used in various operating conditions, their compatibility for the specific pneumatic system must be based on specifications or after analysis and/or tests to meet your specific requirements.
2. **Only trained personnel should operate pneumatically operated machinery and equipment.**
   Compressed air can be dangerous if an operator is unfamiliar with it. Assembly, handling or repair of pneumatic systems should be performed by trained and experienced operators.
3. **Do not service machinery/equipment or attempt to remove component until safety is confirmed.**
   1) Inspection and maintenance of machinery/equipment should only be performed after confirmation of safe locked-out control positions.
   2) When equipment is to be removed, confirm the safety process as mentioned above. Switch off air and electrical supplies and exhaust all residual compressed air in the system.
   3) Before machinery/equipment is re-started, ensure all safety measures to prevent sudden movement of cylinders etc. (Bleed air into the system gradually to create back-pressure, i.e. incorporate a soft-start valve).
4. **Contact SMC if the product is to be used in any of the following conditions:**
   1) Conditions and environments beyond the given specifications, or if product is used outdoors.
   2) Installations in conjunction with atomic energy, railway, air navigation, vehicles, medical equipment, food and beverage, recreation equipment, emergency stop circuits, press applications, or safety equipment.
   3) An application which has the possibility of having negative effects on people, property, or animals, requiring special safety analysis.

⚠ CAUTION

Ensure that the air supply system is filtered to 5 micron.

SYJ3000 Series 4 and 5 port (Fig 1)

Specifications

Fluid		Air
Operating pressure range (MPa {kgf/cm²})	2 position single	0.15 to 0.7 {1.5 to 7.1}
	2 position double	0.1 to 0.7 {1 to 7.1}
	3 position	0.2 to 0.7 {2 to 7.1}
Ambient and fluid temperature (°C)		Max. 50
Response time (ms) at 0.5MPa {5.1 kgf/cm²}	2 position single, double	Note 1) 15 or less
	3 position	Note 1) 30 or less
Max. operating frequency (Hz)	2 position single, double	10
	3 position	3
Manual override		Non-locking push type, push-locking slotted type
Pilot exhaust		Individual pilot exhaust type, common exhaust (pilot and main valve) type
Lubrication		Not required
Mounting position		Free
Impact/Vibration resistance (m/s²)		Note 2) 150/30
Protection structure		IP40

Note 1: According to dynamic performance test JIS B8374-1981 (Coil temperature 20°C, at rated voltage, without surge voltage suppresser).
Note 2: Shock resistance: No malfunction from test using drop impact tester, to axis and right angle direction of main valve and armature, each one time when energised and de-energised.
Vibration resistance: No malfunction from test with 8.3~2000Hz 1 sweep, to axis and right angle direction of main valve and armature, each one time when energised and de-energised. (Value in the initial stage.)

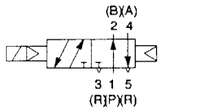
Solenoid Specifications

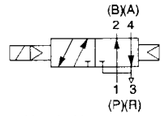
Electrical entry		Grommet (G)/(H), L type plug connector (L), M type plug connector (M)
Coil rated voltage (V)	DC	24, 12, 6, 5, 3
Allowable voltage		±10% rated voltage
Power consumption (W) Note)	DC	0.5 (with light: 0.55)
Surge voltage suppresser		Diode
Indicator light		LED

Note: At rated voltage.

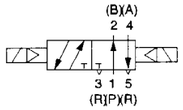
SYJ3000 JIS Symbol 5 Port | **JIS Symbol 4 Port (manifold)**

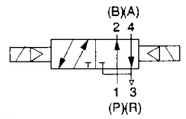
2 Position single



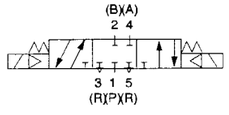


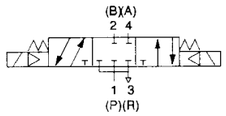
2 Position double



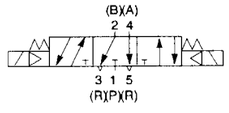


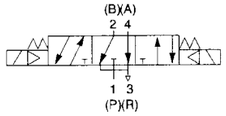
3 Position closed centre



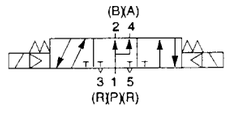


3 Position exhaust centre





3 Position pressure centre



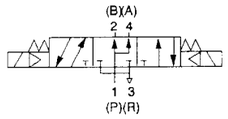


Fig 1

Installation

⚠ WARNING

1. Ensure ALL air and power supplies are ISOLATED before commencing Installation.
2. DO NOT install these valves in an explosive atmosphere.
3. Protect from oil and water splashes.
4. If it is intended to energise a valve for extended periods of time consult SMC.
5. DO NOT subject a valve to impact or vibration.
6. Operate within the specified pressure and temperature ranges.
7. NOT suitable as an emergency shut off valve.

Solenoid manual override (applicable to all series (Fig 2)

⚠ CAUTION

Exercise extreme caution, and ensure safety precautions are observed, before operating any manual override, as connected equipment will commence operation.

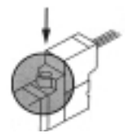
Non-Locking push type (Fig 2)
1. Push down the override button using a small bladed screwdriver until it stops.
2. Hold this position during duration of checks.
3. Release the override button and the override will reset to the OFF position.

Push locking slotted manual override (Fig 2)
1. Push down the slotted manual override using a small screwdriver until it stops.
2. Turn the screwdriver through 90°, in the direction of the arrow, remove the screwdriver.

Note: In this position the manual override is "locked-ON".
3. Replace the screwdriver into the manual override, and turn through 90° in reverse.
4. Remove the screwdriver and the manual override will reset to the OFF position.

Non-locking push type [Standard type]

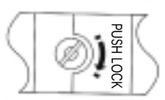
Press in the direction of the arrow.



Push-locking slotted type [D]

While pressing, turn in the direction of the arrow.
If you do not turn, the mechanism does not lock in position.

Locked position

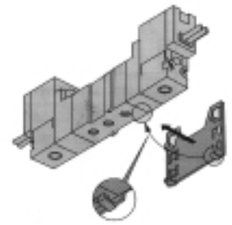


Note: A second manual override is located on the pilot valve assembly. It is only available as a non-locking push type. Simply depress in the direction of the arrow shown to operate.

Fig 2

Bracket Mounting (Fig 3)

1 Insert the lower hook of the mounting bracket into the groove on the bottom of the valve as shown.



2 Press the valve and mounting bracket together until the upper hook of the bracket snaps into place in the groove on top of the valve.

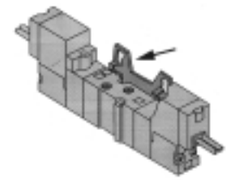


Fig 3

Manifold specifications

Standard

Type		Type 20	Type 31,S31	Type 32,S32	Type 41,S41	Type 46,S46
Manifold type		Single base type/B mount				
P(SUP)/R(EXH) type		Common SUP, Common EXH				Common SUP Common EXH
Valve stations		2 to 20 stations				
A, B port specifications	Location	Valve	Base			
	Direction	Top	Side			
Port size	P, R port	M5x0.8		Rc(PT)1/8		P:Rc(PT)1/8 R:M5x0.8
	A, B port	M3x0.5		M5x0.8,C4(ø4 one-touch fitting)		
Effective area Note) mm²(Cv)	Body ported type SYJ3□2□	0.9 (0.05)	-	-	-	-
	Base mounted type SYJ3□3□	-	0.9 (0.05)	1.2(0.067)	-	-
	Base mounted type SYJ3□4□	-	-	-	1.5(0.08)	1.0(0.055)

Note: Value for a single solenoid 2 position valve mounted on the manifold.

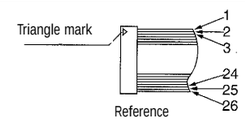
Flat cable manifold specifications

Type		Type 21P	Type 32P
Manifold type		Single base type/B mount	
P(SUP)/R(EXH) type		Common SUP/Common EXH	
Valve stations		4 to 12 stations	
A, B port specifications	Location	Valve	Base
	Direction	Top	Side
Port size	P, R port	Rc(PT)1/8	
	A, B port	M3x0.5	M5x0.8,C4(ø4 one-touch fitting)
Effective area Note 1) mm² (Cv)	SYJ3□23	0.9 (0.5)	-
	SYJ3□33	-	1.2(0.067)
Connector		Socket: 26 poles MIL type with strain relief conforms to MIL-C-83503	
Internal wiring (note 2)		Both for +COM and -COM	
Applicable solenoid valve		SYJ3□23-5/6 LOU □-M3	SYJ3□33-5/6 LOU□
Rated voltage		24VDC, 12VDC	

Note 1) Value for a single operation of 2 position valve mounted on manifold base.
Note 2: The manifold can be wired for either positive or negative common because only non-polar valves are used. The use of valves other than non-polar types is not recommended and may cause damage to the electrical circuit.

Multiple valve wiring can be simplified through the use of a Flat Cable connector. Each valve is wired to the Manifold base. A single MIL specification flat cable connects the entire manifold, reducing installation time.

Internal wiring of manifold (common to all series) (Fig 4)



Note: Terminal number is not indicated on the connector.
The terminal number indicated in the connection schematic of connector, as shown in the reference, means a correlation of 1, 2, 3.....26 from the triangle mark side on the flat cable of connector.

- For more than 10 stations, both poles of the common should be wired.
- For single solenoid, connect to the solenoid B side.
- The maximum number of stations is 12. If more than 12 stations are required, consult SMC.
- Only non-polar valves are available for the flat cable manifold, therefore negative COM and positive COM wiring of the manifold is possible.

Fig 4

Blanking plate assembly (Fig 5)

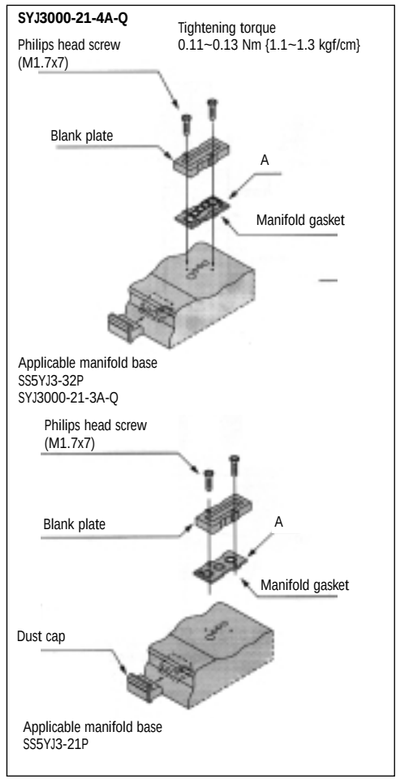


Fig 5

Correct combination of blanking plate and base (Fig 6)

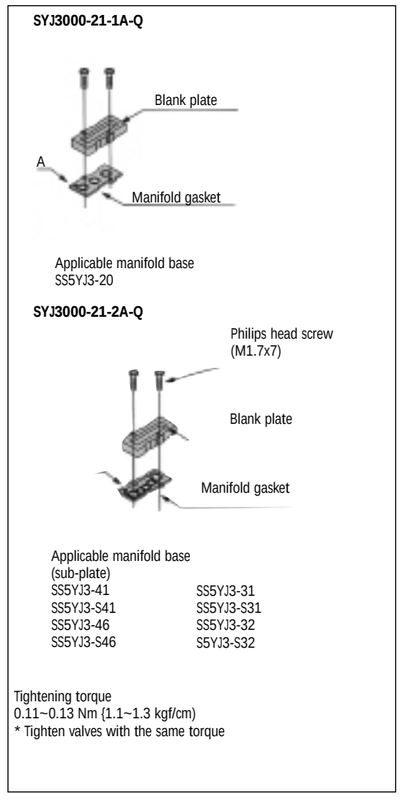


Fig 6

Difference between 4 and 5 port valves (Fig 7)

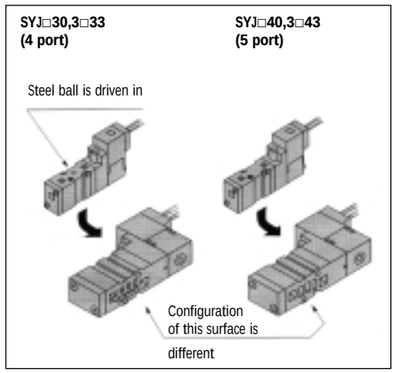
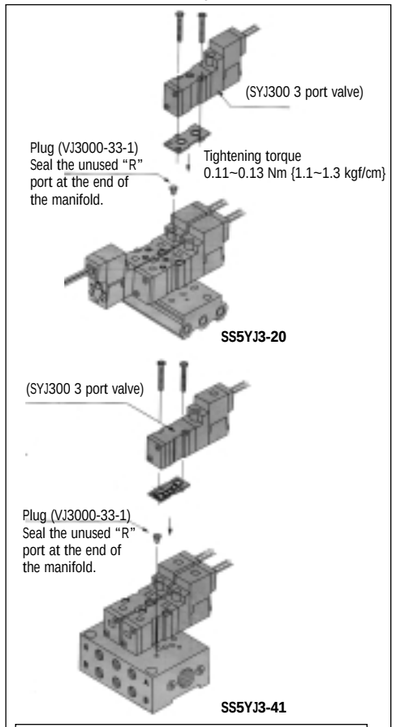


Fig 7

Mixed installation of SYJ300 and SYJ3000 on a common manifold (Fig 8)

It is possible to mount the SYJ300 series and the SYJ3000 series onto a common Manifold, as shown in fig 8.



A port of the 3 way valve flows out the manifold B port.

Fig 8

1 Type SS5YJ3-20, SS5YJ3-21P
The 3 way valve can be used on the 4 way manifold by simply sealing off the unused "R" port with plug VJ3000-33-1.

Applicable solenoid valve: Type SYJ312, Type SYJ312M
Type SYJ322, Type SYJ322M

2 Type SS5YJ3-31,-S31, SS5YJ3-32,-S32, SS5YJ3-46,-S46, SS5YJ3-32P
The 3 way valve can be used on the 4 way manifold without modification. The A port of the valve will flow out of the B port of the manifold.

Applicable solenoid valve: Type SYJ314, Type SYJ314M
Type SYJ324, Type SYJ324M

3 Type SS5YJ3-41,-S41
The 3 way valve can be used on the 4 way manifold by simply sealing off the unused "R" port with plug VJ3000-33-1. The A port of the valve will flow out of the B port of the manifold.

Applicable solenoid valve: Type SYJ314, Type SYJ314M
Type SYJ324, Type SYJ324M

SYJ5000 Series 5 port valve (Fig 9)

Specifications

Fluid		Air
Operating pressure range (MPa {kgf/cm²})	2 position single	0.15 to 0.7 {1.5 to 7.1}
	2 position double	0.1 to 0.7 {1 to 7.1}
	3 position	0.15 to 0.7 {1.5 to 7.1}
Ambient and fluid temperature (°C)		Max. 50
Response time (ms) at 0.5MPa {5.1 kgf/cm²}	2 position single, double	Note 1) 25 or less
	3 position	Note 1) 40 or less
Max. operating frequency (Hz)	2 position single, double	5
	3 position	3
Manual override		Non-locking push type, push-locking slotted type
Pilot exhaust		Individual pilot exhaust type, common exhaust (pilot and main valve) type
Lubrication		Not required
Mounting position		Free
Impact/Vibration resistance (m/s²)		Note 2) 150/30
Protection structure		IP40

Note 1: According to dynamic performance test JIS B8374-1981 (Coil temperature 20°C, at rated voltage, without surge voltage suppresser).
Note 2: Shock resistance: No malfunction from test using drop impact tester, to axis and right angle direction of main valve and armature, each one time when energised and de-energised.
Vibration resistance: No malfunction from test with 8.3~2000Hz 1 sweep, to axis and right angle direction of main valve and armature, each one time when energised and de-energised. (Value in the initial stage.)

Solenoid Specifications

Electrical entry		Grommet (G)/(H), L type plug connector (L), M type plug connector (M)
Coil rated voltage (V)	DC	24, 12, 6, 5, 3
Allowable voltage		±10% rated voltage
Power consumption (W) Note)	DC	0.5 (with light: 0.55)
Surge voltage suppresser		Diode
Indicator light		LED

Note: At rated voltage.

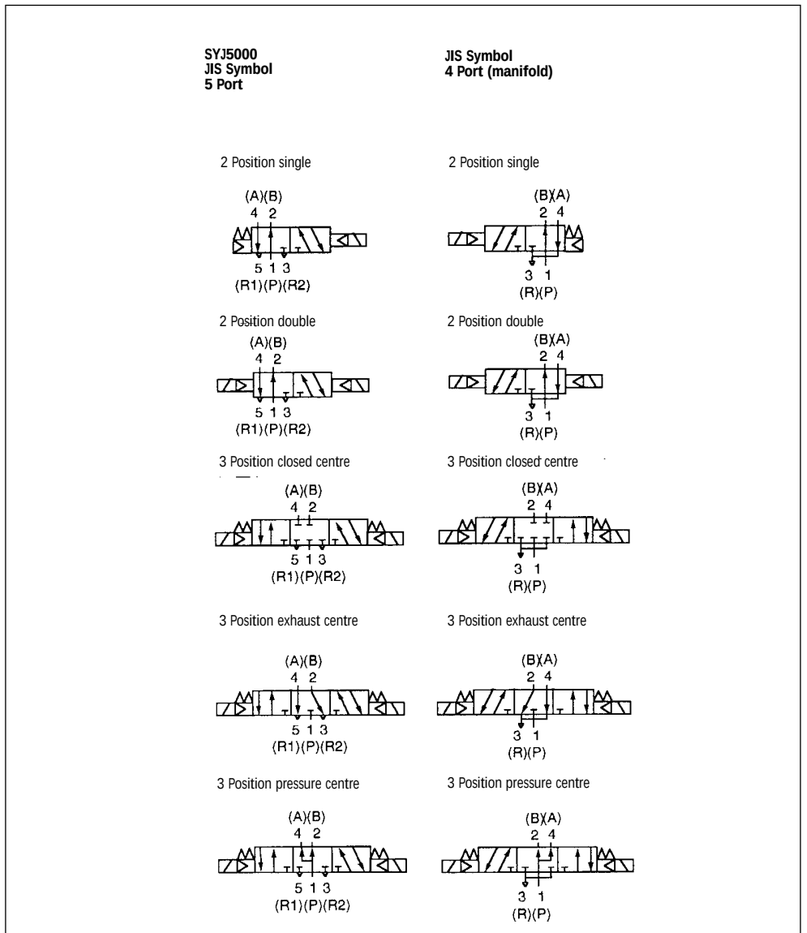


Fig 9

Manifold specifications

Standard

Type		Type 20	Type 40	Type 41	Type 42	Type 43
Manifold type		Single base type/B mount				
P(SUP)/R(EXH) type		Common SUP, Common EXH				
Valve stations		2 to 20 stations				
A, B port specifications	Location	Valve	Base	Base		
	Direction	Top	Bottom	Side		
Port size	P, R port	Rc(PT)1/8			Rc(PT)1/4	Rc(PT)1/8
	A, B port	M5x0.8 C4	M5x0.8		Rc(PT)1/8, C6 (Ø6 One-touch fitting)	C4 (Ø4 One-touch fitting)
Valve Effective area Note) mm²(Cv)	Body ported type SYJ5□2□	M5: 3.4 (0.19) C4: 3(0.17) C6: 3.4 (0.19)	-	-	-	-
	Base mounted type SYJ5□4□	-	3.0 (0.17)	2.9 (0.16)	3.8 (0.21)	3.2 (0.18)

Note: Value for a single solenoid 2 position valve mounted on the manifold.

Flat cable manifold

Type		Type 20P	Type 41P	Type 43P
Manifold type		Single base type/B mount		
P(SUP)/R(EXH) type		Common SUP/Common EXH		
Valve stations		3 to 12 stations		
A, B port specifications	Location	Valve	base	
	Direction	Top	Side	
Port size	P, R port	Rc(PT)1/8	Rc(PT)1/8	
	A, B port	M5x0.8 C4 (ø4 one-touch fitting) C6 (ø6 one-touch fitting)	M5x0.8	C4(ø4 one-touch fitting)
Valve effective area mm² (Cv) Note 1)	Body ported type SYJ5□23	M5: 3.4 (0.19) C4:3(0.17) C6:3.4 (0.19)	-	-
	Base mounted type SYJ5□43	-	2.9 (0.16)	3.2 (0.18)
Connector		Socket: 26 poles MIL type with strain relief conforms to MIL-C-83503		
Internal wiring (note 2)		Both for +COM and -COM		
Applicable solenoid valve		SYJ5□23- 5/6 LOU M5/C4/C6	SYJ5□43- 5/6 LOU□, SYJ5□53- 5/6 LOU□	
Rated voltage		24VDC, 12VDC		

Note 1: Value for a single operation of 2 position valve mounted on manifold base.
Note 2: The manifold can be wired for either positive or negative common because only non-polar valves are used. The use of valves other than non-polar types is not recommended and may cause damage to the electrical circuit.

Internal wiring as per SYJ3000 Series

Individual exhaust interface (Fig 10)

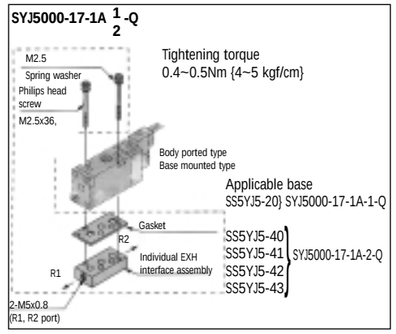


Fig 10

Individual supply interface (Fig 11)

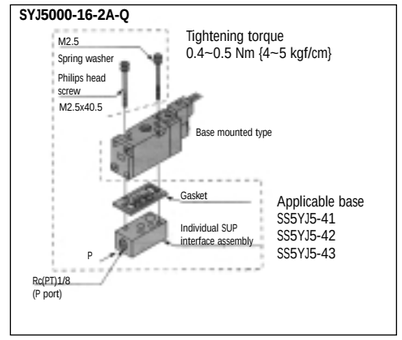


Fig 11

Blanking plate assembly (Fig 12)

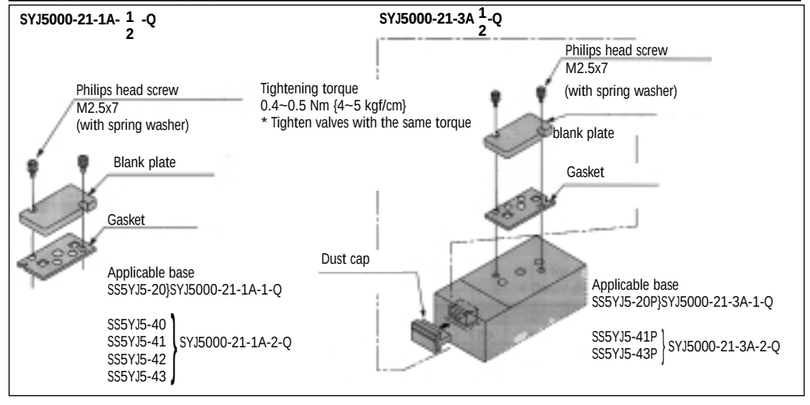
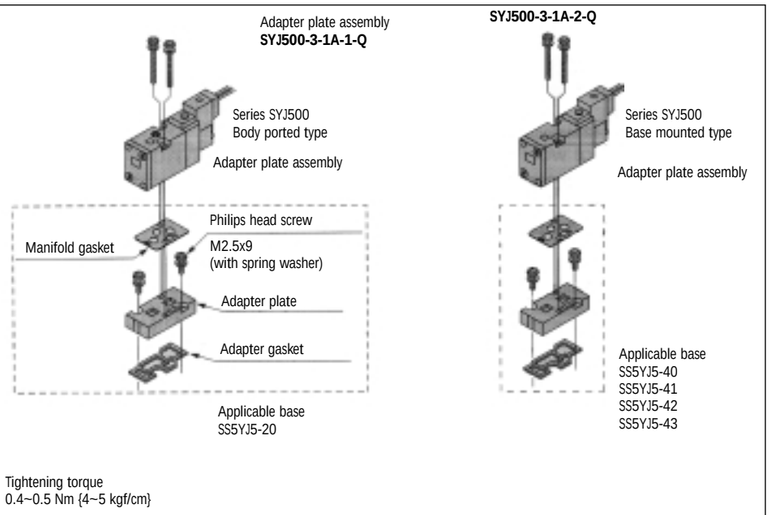


Fig 12

Installation of SYJ500 series and SYJ5000 series onto a common manifold (Fig 13)

By the use of an adapter plate it is possible to mount SYJ500 and SYJ5000 on the same manifold, see fig 13



Tightening torque
0.4~0.5 Nm {4~5 kgf/cm}

Fig 13

SYJ7000 Series 5 port valve (Fig 14)

Specifications

Fluid		Air
Operating pressure range (MPa {kgf/cm²})	2 position single	0.15 to 0.7 {1.5 to 7.1}
	2 position double	0.1 to 0.7 {1 to 7.1}
	3 position	0.15 to 0.7 {1.5 to 7.1}
Ambient and fluid temperature (°C)		Max. 50
Response time (ms) at 0.5MPa {5.1 kgf/cm²}	2 position single, double	Note 1) 30 or less
	3 position	Note 1) 60 or less
Max. operating frequency (Hz)	2 position single, double	5
	3 position	3
Manual override		Non-locking push type, push-locking slotted type
Pilot exhaust		Individual pilot exhaust type, common exhaust (pilot and main valve) type
Lubrication		Not required
Mounting position		Free
Impact/Vibration resistance (m/s²)		Note 2) 150/30
Protection structure		IP40

Note 1: According to dynamic performance test JIS B8374-1981 (Coil temperature 20°C, at rated voltage, without surge voltage suppresser).
Note 2: Shock resistance: No malfunction from test using drop impact tester, to axis and right angle direction of main valve and armature, each one time when energised and de-energised.
Vibration resistance: No malfunction from test with 8.3~2000Hz 1 sweep, to axis and right angle direction of main valve and armature, each one time when energised and de-energised. (Value in the initial stage.)

Solenoid Specifications

Electrical entry		Grommet (G)/(H), L type plug connector (L), M type plug connector (M)
Coil rated voltage (V)	DC	24, 12, 6, 5, 3
Allowable voltage		±10% rated voltage
Power consumption (W) Note)	DC	0.5 (with light: 0.55)
Surge voltage suppresser		Diode
Indicator light		LED

Note: At rated voltage.

Manifold specifications

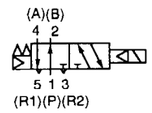
Type		Type 20	Type21	Type 40	Type 41	Type 42
Manifold type		Single base type/B mount				
P(SUP)/R(EXH) type		Common SUP, Common EXH				
Valve stations		2 to 15 stations		2 to 20 stations		
A, B port specifications	Location	Valve		Base	Base	
	Direction	Top		Bottom	Side	
Port size	P, R port	Rc(PT)1/8	Rc(PT)1/4			
	A, B port	Rc(PT)1/8 C6 (ø6 One-touch fitting) C8 (ø8 One-touch fitting)		Rc(PT)1/8		C6 (ø6 One-touch fitting) C8 (ø8 One-touch fitting)
Valve Effective area mm²(Cv) Note)	Body ported type SYJ7□2□	Rc(PT)1/8:11(0.6) C6:8.6(0.48) C8:9.9(0.55)		-	-	-
	Base mounted type SYJ7□4□	-	-	11.9 (0.66)	9.5 (0.53)	C6:8.5(0.47) C8:9.7(0.54)

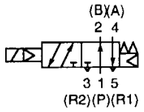
Note: Value for a single solenoid 2 position valve mounted on the manifold.

SYJ7000 JIS Symbol 5 Port

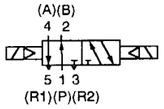
JIS Symbol 4 Port (manifold)

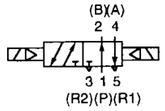
2 Position single



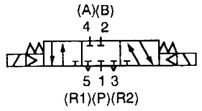


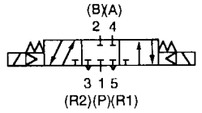
2 Position double



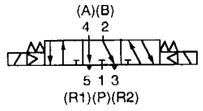


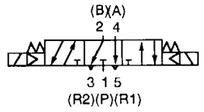
3 Position closed centre



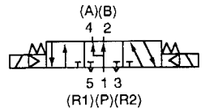


3 Position exhaust centre





3 Position pressure centre



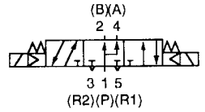


Fig 14

Flat cable manifold specifications

Type		Type 21P
Manifold type		Single base type/B mount
P(SUP), R(EXH) type		Common SUP, Common EXH
Valve stations		3 to 12 stations
A port specifications		Valve
Port size	P, R port	Rc(PT)1/4
	A, B port	Rc(PT)1/8,C6,C8
Valve effective area mm²(Cv) Note 1)	SYJ7□23	Rc(PT)1/8:11(0.6)
		C6:8.6(0.48)
		C8:9.9(0.55)
Connector		Socket: 26 poles MIL type with strain relief conforms to MIL-C-83503
Internal wiring Note 2)		Both for +COM and -COM
Applicable solenoid valve		SYJ7□23- 5/6 LOU□ 01/C6/C8
Rated voltage		24VDC, 12VDC

Note 1: Value for single operation of 2 position valve mounted on manifold base.
Note 2: The manifold can be wired for either positive or negative common because only non polar valves are used. The use of valves other than non polar type is not recommended and may cause damage to the electrical circuit.

Individual exhaust interface (Fig 15)

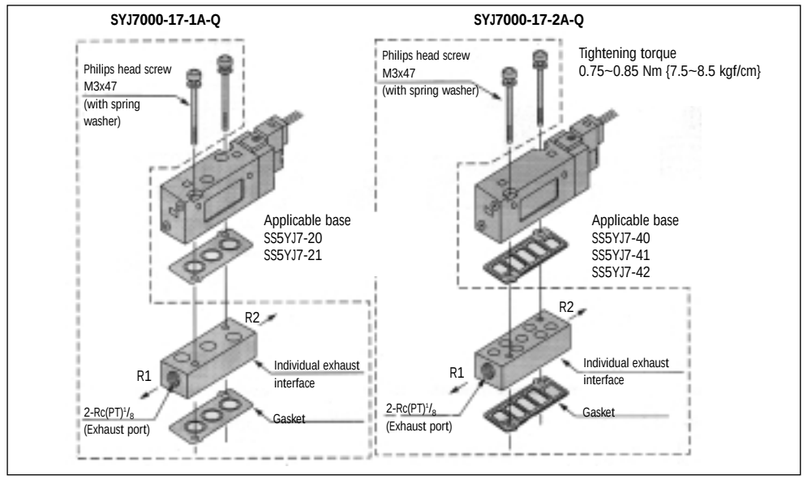


Fig 15

Individual supply interface (Fig 16)

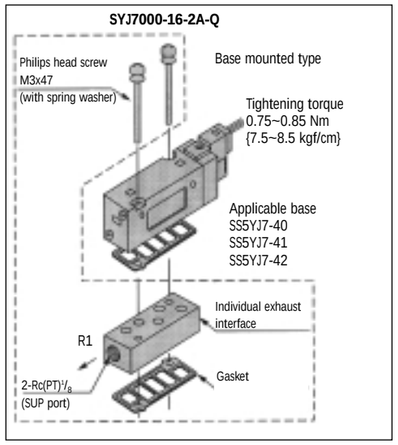


Fig 16

Blanking plate assembly (Fig 17)

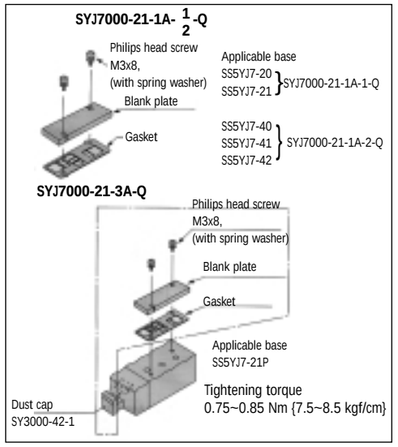


Fig 17

Installation of SYJ700 series valves and SYJ7000 series valves onto a common manifold (Fig 18)

The use of an adapter plate makes it possible to mount SYJ700 and SYJ7000 valves onto a common manifold, see fig 16.

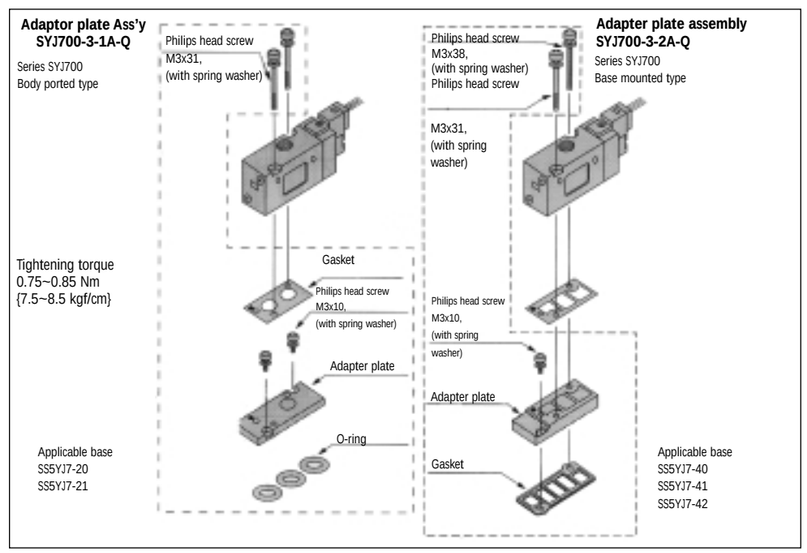


Fig 18

Interface regulator SYJ5000/7000 Series (Fig 19)

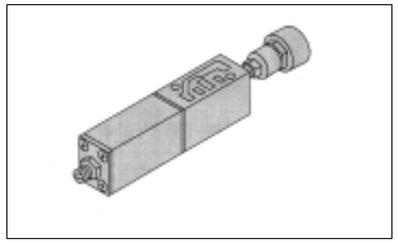


Fig 19

Installing an interface regulator between a valve and the manifold base makes it possible to reduce the supply pressure to that valve without changing the supply pressure of the other stations on the manifold.

Specifications

Interface regulator		ARBYJ5000	ARBYJ7000
Applicable solenoid valve		SYJ5000	SYJ7000
Regulator port		P	P
Proof pressure		1.5MPa {15.3 kgf/cm²}	
Max. operating pressure		1.0MPa {10.2 kgf/cm²}	
Setting pressure range		0.05 to 0.7MPa {0.5 to 7 kgf/cm²} Note 1)	
Ambient and fluid temperature		5 to 60°C Note 2)	
Thread size for connection of pressure gauge		M5x0.8	
Weight (kg)		0.06	0.09
Effective area at exhaust side (mm²) Note 3)	P→A	1.9	5.1
S at P_1=0.7MPa, P_2=0.5MPa	P→B	2.1	5.8
Effective area at supply side (mm²) Note 4)	A→EA	4.5	12.6
S at P_2=0.5MPa	B→EB	4.5	12.6

Note 1: Set the pressure within the operating pressure range of the solenoid valve.
Note 2: The maximum operating temperature for the valve is 50°C.
Note 3: The effective area listed is for a single solenoid 2 position valve mounted on a sub-plate.
Note 4: The interface regulator is only capable of regulating the "P" port pressure.

Voltage leakage (Fig 21)

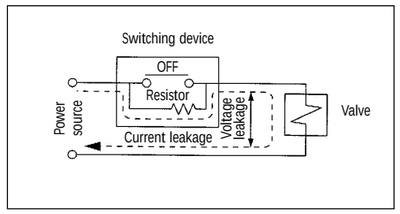


Fig 21

When a C-R device (surge voltage suppresser) is used for the protection of switching device, note that voltage leakage will be increased by passing voltage leakage through C-R device.
Suppress residual voltage leakage as follows:
DC coil: 3% or less of rated voltage

Correct use of the plug connector (Fig 22)

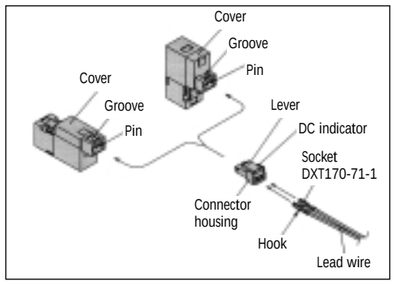


Fig 22

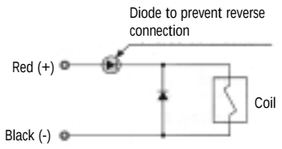
Insertion/Removal of connector
Insertion
Push the connector straight on to the pins of the solenoid, making sure the lip of the lever securely "locks" into the groove of the solenoid cover.

Removal
Press the lever against the connector housing and pull it outward from the solenoid.

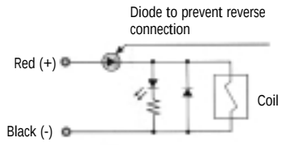
Surge voltage suppression SYJ3000/5000/7000 Series (Fig 20)

<For DC>
Grommet, L and M type plug connector

With surge voltage suppresser

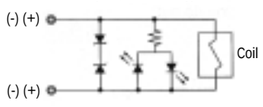


Indicator light and surge voltage suppresser (□ Z)



Non polarity type (□ U)

(12V, 24VDC only)



Please correctly connect the lead wires to ⊕ (positive) and ⊖ (negative) indications on the connector.
For non-polarity type, the lead wires can be connected to either one.
For DC Voltages other than 12, 24, incorrect wiring will cause damage to the surge voltage suppresser circuit.
(Wrong polarity will cause trouble).
Solenoids, whose lead wires have been pre-wired, are positive side red and negative side black.

Fig 20

Connection/Disconnection of socket with lead wire (Fig 23)

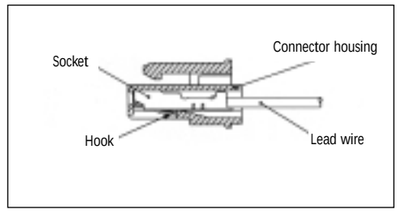


Fig 23

Connection
Insert lead wire and crimped socket into square holes (indicated as A, B, COM) of connector. Press the socket in fully until the hook of the socket locks into the groove of the connector housing. Confirm the locked position by lightly pulling on the lead wire.

Disconnection
To remove the socket from the connector, pull out lead wire while depressing the hook of the socket with a fine screwdriver (or similar). If the socket is to be re-used, reposition the hook again.

Port plug positions

Plug position		B port	A port
Configuration		N.C.	N.O.
Number of solenoids	Single	Plug A1 TB R_1 P R_2	AT IB R_1 P R_2
	Double	Plug A1 TB R_1 P R_2	Plug AT IB R_1 P R_2

(JIS Symbols: Series SYJ5000)

Tightening torques for fittings
When installing fitting etc., follow the given torque levels below.

Tightening torque

Thread	Appropriate tightening torque Nm (kgf-cm)
M3	0.3 to 0.5 (3 to 5)
M5	1.5 to 2 (15 to 20)
Rc(PT)1/8	7 to 9 (70 to 90)
Rc(PT)1/4	12 to 41 (120 to 140)

Maintenance

⚠ WARNING

1. Before carrying out any maintenance work ensure all air and power supplies are ISOLATED.
2. Ensure safety precautions are in place to prevent actuators from "DROPPING".
3. Exhaust any residual air pressure in the system before attempting to carry out any maintenance work.

Lubrication

The valve has been lubricated for life at manufacture and requires no additional lubrication.

⚠ CAUTION

However if a lubricant is to be used, a turbine oil type #1 (ISO VG32) should be used. If a lubricant is used, continuous lubrication must be carried out as the original lubricant will be washed away.

Energisation time

The double solenoid valve must be energised for at least 0.05 second to ensure proper operation.

Low temperature application

May be used down to -10°C if the air is sufficiently free of moisture. Please use an appropriate dryer to ensure dry air preventing the valve from freezing.

Energising in a long run

For use of long run energising, its specifications should be consulted.

⚠ CAUTION

Common exhaust port for the pilot and main valve
Pilot air is exhausted through the main valve body rather than directly to atmosphere.

- Suitable for applications where exhausting the pilot valve to atmosphere would be detrimental to the surrounding working environment.
- For use in extremely dirty environments where there is the possibility that dust could enter the pilot exhaust and damage the valve. Ensure that the piping of exhaust air is not too restrictive.

Should you require any additional information please contact your local SMC office, see details below:

When you enquire about the product, please contact the following

SMC Corporation:

ENGLAND	Phone 01908-563888	**TURKEY**	Phone 212-2211512
ITALY	Phone 02-92711	**GERMANY**	Phone 6103-402-0
HOLLAND	Phone 020-5318888	**FRANCE**	Phone 01-64-76-10-00
SWITZERLAND	Phone 052-396 31 31	**SWEDEN**	Phone 08-603 07 00
SPAIN	Phone 945-184100	**AUSTRIA**	Phone 02262-62-280
	Phone 902-255255	**IRELAND**	Phone 01-4501822
GREECE	Phone 01-3426076	**DENMARK**	Phone 70 25 29 00
FINLAND	Phone 09-68 10 21	**NORWAY**	Phone 67-12 90 20
BELGIUM	Phone 03-3551464	**POLAND**	Phone 48-22-6131847
		PORTUGAL	Phone 02-610 8922